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## 'Tis the Season...for Norovirus

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Communities beware: norovirus season has arrived! Noroviruses are the most common cause of viral gastroenteritis. Outbreaks commonly occur in schools, hospitals, long-term care facilities, day-care centers, jails, food establishments, or anywhere else people congregate in a community setting. Although norovirus infection can occur any time of year, peak activity most often occurs roughly from November-February, overlapping influenza/respiratory seasonality.

In 2006, a new strain of norovirus emerged, resulting in a surge of outbreaks in many Indiana counties. Over 100 long-term care facilities reported an excess number of patients ill with signs and symptoms of viral gastroenteritis. Of the 100 outbreaks investigated, 28 were confirmed as norovirus by laboratory testing and 72 were suspected. A suspected outbreak is defined as one in which individuals experience symptoms consistent with norovirus infection but are not laboratory confirmed.

In October 2006, the ISDH Surveillance and Investigation Section developed a database to track norovirus outbreaks in anticipation of outbreaks occurring this season. It is important to report a suspected norovirus outbreak as soon as possible since the virus can move quite rapidly throughout a facility or population. Many of the suspected outbreaks that have been reported in Indiana have been reported after the outbreak has ended. Reporting a suspected outbreak as early as possible can help ensure rapid control, containment, and prevention of further illnesses.

Noroviruses are transmitted by the fecal-oral route, usually through contaminated food or water, contact with contaminated objects, and close contact with those infected. Only a small amount of virus is needed to cause infection. Symptoms of norovirus typically include diarrhea, vomiting, nausea, and stomach cramping, which usually occur 12-48 hours after exposure. Chills, headache, low-grade fever, and muscle aches can also occur in some people. Norovirus infection is usually a self-limiting illness with symptoms typically lasting one to two days. Because infection is viral, antibiotics are not effective in treating the infection. Currently, there is no vaccine or antiviral

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treatment that can be used to fight norovirus infection. There are many different strains of norovirus; therefore, a person can have recurring infections.

In general, most viral gastroenteritis can be prevented by strictly adhering to the following guidelines:

- Thoroughly wash hands with soap and water:
  1. Before preparing and serving food
  2. After using the restroom
  3. After eating
  4. After diapering a child
  5. After cleaning a soiled area
- Persons with diarrhea and/or vomiting should not prepare food for others and should limit direct contact with others as much as possible;
- Staff with diarrhea and/or vomiting shall be excluded from employment involving food handling (Indiana Retail Food Establishment Sanitation Requirements, 410 IAC 7-24-122); and
- Wash all produce before eating raw or cooking.

## **Excellence in Epidemiology Awards**

Shawn M. Richards, BS  
*Respiratory Epidemiologist*

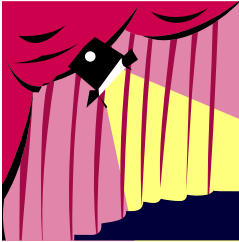
The Indiana State Department of Health (ISDH) has presented the Excellence in Epidemiology Award to 12 health care providers in Indiana. The Excellence in Epidemiology Award was developed to recognize outstanding contributions to epidemiology and public health surveillance. These recipients received the awards because of their partnership and participation in the influenza sentinel surveillance program. By their impressive 100 percent reporting record, they have greatly assisted the ISDH in identifying the specific types of influenza viruses circulating in Indiana. These awards were made possible by the federal Epidemiology and Laboratory Capacity cooperative agreement. Award recipients are:

- Dr. Jerrold Smith and Community Pediatrics, Indianapolis
- Dr. Jeb Teichman and Jeffersonville Pediatrics, Jeffersonville
- Fran Drake and the Indiana State University Health Center, Terre Haute
- Patricia Brubaker and Notre Dame University Health Services, Notre Dame
- Beth Meyer and the Switzerland County Nurse Managed Clinic, Vevay
- Dr. Rex Allman, Winamac
- Maureen Panares and Purdue University, Calumet
- Dr. Joanne Guttman and the Brookville Medical Clinic, Brookville
- Hendricks Regional Immediate Care, Plainfield
- St. Vincent Mercy Hospital Emergency Department, Elwood
- Family Health and Help Center, Rockville
- Dr. Carl Kuenzli, Kokomo

ISDH Surveillance and Investigation representatives presented each award, a personally engraved and framed piece of art, to each of these providers. The ISDH congratulates these sentinel

providers and looks forward to continuing to work with them to improve influenza surveillance in Indiana.

For more information on the ISDH influenza sentinel surveillance program, please contact Shawn Richards, ISDH Respiratory Epidemiologist, at 317.233.7125.



## ***OUTBREAK SPOTLIGHT....***

*Outbreak Spotlight is a recurring feature in the Indiana Epidemiology Newsletter to illustrate the importance of various aspects of an outbreak investigation. The event described below highlights an investigation of respiratory illness from a church mission trip to Nicaragua.*

### **Outbreak of Histoplasmosis Associated with a Mission Trip to Nicaragua**

Brad Beard  
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#### ***Background***

On July 16, 2007, a representative of the Auburn Family Practice contacted the Dekalb County Health Department (DCHD) to report that several people developed symptoms of respiratory-type illness after returning from a mission trip to Nicaragua. Members of the group had manually dug trenches for new home construction.

#### ***Epidemiologic Investigation***

The Indiana State Department of Health (ISDH) and DCHD initiated a collaborative investigation to describe the outbreak and to identify cases of illness. The DCHD obtained a list of all members of the mission group and conducted interviews to determine who had become ill. All members of the group indicated they were aware of the probable diagnosis of histoplasmosis and what symptoms to observe. A confirmed case was defined as a previously healthy person who became ill after returning from the mission trip to Nicaragua and had laboratory confirmation of histoplasmosis. A probable case was defined as a previously healthy person who became ill after returning from the mission trip and had confirmed pulmonary infiltrates from chest x-ray but did not have laboratory evidence of infection.

The DCHD interviewed all 13 people reported ill. Predominant symptoms reported were fever and chest tightness. Other symptoms included malaise, myalgia, night sweats, weight loss,

headache, and body aches. The median incubation period of illness was 7-10 days. All 13 people sought medical attention, and one person was hospitalized for several days. Six cases submitted specimens for laboratory analysis, including serum, urine, and tissue from a lung biopsy.

### ***Environmental Assessment***

According to a representative of the DCHD, members of the mission group dug trenches for homes on three consecutive days. Thirteen of the 16 mission members who were exposed to soil and debris while digging became symptomatic. The exposure time varied with assigned work schedules. One case spent an extensive amount of time in the trenches, thus prolonging exposure.

### ***Laboratory Results***

Six cases submitted serum, urine, or lung tissue to the local hospital laboratory for analysis. All six cases tested positive for histoplasmosis.

### ***Conclusions***

This investigation confirms that an outbreak of histoplasmosis occurred among church mission members performing excavation activities from June 14-24, 2007. The extremely short window of illness onset and lack of subsequent cases after the outbreak strongly suggest a common source exposure. The only common exposure among all the cases was the manual digging of trenches for new home construction in Nicaragua.

The causative agent of this outbreak was *Histoplasma capsulatum*. Six people tested positive. The clinical symptoms described (headache, fever, malaise, myalgia, weight loss, and fever) are consistent with histoplasmosis. The median incubation time was 7-10 days, which falls within the incubation period for histoplasmosis. Infection generally occurs when *H. capsulatum* spores are inhaled. Most infections are asymptomatic or mild, although severe illness may occur in people with weakened immune systems or those who are exposed to high levels of fungal spores. The infection is not transmitted person to person.

*H. capsulatum* is normally found in soils with a high nitrogen content, including soil throughout Indiana and other states within the Ohio Valley. Soils enriched with bird or bat droppings usually have high nitrogen levels that facilitate fungal growth. Fungal spores in soil may become airborne if soil is disturbed, such as during construction, excavation, or earthquakes, creating opportunity for infection. The one common exposure in all cases was the excavation of trenches for new home construction in Nicaragua. Soil disturbance from trench excavation most likely created aerosols of fungal spores that were inhaled to cause infection.

Most instances of histoplasmosis can be prevented by observing the following guidelines:

1. Minimize exposure to dust in environments suitable for *H. capsulatum*, such as chicken coops.
2. Spray soil with water or oil to reduce dust.
3. Use protective masks when working in dusty areas or areas prone to soil disturbance.



## **Training Room**

# **INDIANA STATE DEPARTMENT OF HEALTH IMMUNIZATION PROGRAM PRESENTS:**

### ***Immunizations from A to Z***

Immunization Health Educators offer this FREE, one-day educational course that includes:

- Principles of Vaccination
- Childhood and Adolescent Vaccine-Preventable Diseases
- Adult Immunizations
  - Pandemic Influenza
- General Recommendations on Immunization
  - Timing and Spacing
  - Indiana Immunization Requirements
  - Administration Recommendations
  - Contraindications and Precautions to Vaccination
- Safe and Effective Vaccine Administration
- Vaccine Storage and Handling
- Vaccine Misconceptions
- Reliable Resources

This course is designed for all immunization providers and staff. Training manual, materials, and certificate of attendance are provided to all attendees. Please see the Training Calendar for presentations throughout Indiana. Registration is required. To attend, schedule/host a course in your area or for more information, please reference

<http://www.IN.gov/isdh/programs/immunization.htm>.

## ISDH Data Reports Available

**The following data reports and the *Indiana Epidemiology Newsletter* are available on the ISDH Web Page:**

[http://www.IN.gov/isdh/dataandstats/data\\_and\\_statistics.htm](http://www.IN.gov/isdh/dataandstats/data_and_statistics.htm)

HIV/STD Quarterly Reports (1998-June 2006)	Indiana Mortality Report (1999, 2000, 2001, 2002, 2003, 2004, 2005)
Indiana Cancer Incidence Report (1990, 1995, 1996, 1997, 1998)	Indiana Infant Mortality Report (1999, 2002, 1990-2003)
Indiana Cancer Mortality Report (1990-1994, 1992-1996)	Indiana Natality Report (1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005)
Combined Cancer Mortality and Incidence in Indiana Report (1999, 2000, 2001, 2002, 2003, 2004)	Indiana Induced Termination of Pregnancy Report (1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005)
Indiana Health Behavior Risk Factors (1999, 2000, 2001, 2002, 2003, 2004, 2005)	Indiana Marriage Report (1995, 1997, 1998, 1999, 2000, 2001, 2002)
Indiana Health Behavior Risk Factors (BRFSS) Newsletter (9/2003, 10/2003, 6/2004, 9/2004, 4/2005, 7/2005, 12/2005, 1/2006, 8/2006, 10/2006, 5/2007, 12/2007)	Indiana Infectious Disease Report (1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005)
Indiana Hospital Consumer Guide (1996)	Indiana Maternal & Child Health Outcomes & Performance Measures (1990-1999, 1991-2000, 1992-2001, 1993-2002, 1994-2003, 1995-2004)
Public Hospital Discharge Data (1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006)	Assessment of Statewide Health Needs - 2007

## HIV Disease Summary

**Information as of November 30, 2007 (based on 2000 population of 6,080,485)**

### *HIV - without AIDS to date:*

399	New HIV cases from December 2006 thru November 30, 2007	12-month incidence	6.94 cases/100,000
3,834	Total HIV-positive, alive and without AIDS on November 30, 2007	Point prevalence	66.65 cases/100,000

### *AIDS cases to date:*

332	New AIDS cases from December 2006 thru November 30, 2007	12-month incidence	5.77 cases/100,000
4,104	Total AIDS cases, alive on November 30, 2007	Point prevalence	71.34 cases/100,000
8,424	Total AIDS cases, cumulative (alive and dead) on November 30, 2007		

## REPORTED CASES

 of selected notifiable diseases

Disease	Cases Reported in November MMWR Weeks 44-47		Cumulative Cases Reported January – November MMWR Weeks 1-47	
	2006	2007	2006	2007
Campylobacteriosis	52	38	507	436
Chlamydia	1,456	1,471	17,884	18,698
Cryptosporidiosis	6	9	90	97
Cyclosporiasis	0	0	1	2
<i>E. coli</i> O157:H7	5	9	82	94
<i>Haemophilus influenzae</i>	7	5	72	54
Hepatitis A	1	1	24	29
Hepatitis B	6	7	52	53
Gonorrhea	621	609	7,931	8,019
Legionellosis	6	3	46	50
Listeriosis	3	1	18	17
Lyme Disease	0	0	21	41
Measles	0	0	1	0
Meningococcal, invasive	2	2	23	26
Mumps	0	0	10	1
Pertussis	29	1	213	53
Rocky Mountain Spotted Fever	0	0	6	4
Salmonellosis	35	48	789	659
Shigellosis	28	39	154	146
<i>Streptococcus pneumoniae</i> (invasive, all ages)	45	31	514	485
<i>Streptococcus pneumoniae</i> (invasive, drug resistant)	20	6	146	148
<i>Streptococcus pneumoniae</i> (invasive, <5 years of age)	4	4	53	42
Syphilis (Primary and Secondary)	10	4	87	52

## REPORTED CASES of selected notifiable diseases (cont.)

Disease	Cases Reported in November MMWR Weeks 44-47		Cumulative Cases Reported January – November MMWR Weeks 1-47	
	2006	2007	2006	2007
Tuberculosis	11	8	109	112
Yersiniosis	0	0	9	13
Animal Rabies	0	1 (bat)	11 (bats)	12 (bats)

**For information on reporting of communicable diseases in Indiana, call the *Surveillance and Investigation* section of the *Public Health Preparedness and Emergency Response Division* at 317.233.7125.**



The *Indiana Epidemiology Newsletter* is published monthly by the Indiana State Department of Health to provide epidemiologic information to Indiana health care professionals, public health officials, and communities.

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